CLAIMS:

1. A pharmaceutical composition for vaccination, comprising:-

(i) a bacterial Cu,Zn-superoxide dismutase (Cu,Zn-SOD) of the dimeric type, or a fragment, variant or derivative of the Cu,Zn-SOD, wherein antibodies raised against said fragment, variant or derivative also bind intact full length Cu,Zn-SOD; or

(ii) a nucleic acid coding for the Cu,Zn-SOD fragment, variant or derivative; and

a pharmaceutically acceptable carrier.

2. A pharmaceutical composition according to Claim 1, wherein said composition provides protection against meningococcal infection.

3. A pharmaceutical composition according to Claim 1 or 2, wherein said composition provides protective immunity to *Actinobacillus pleuropneumoniae* infection.

4. A pharmaceutical composition according to Claims 1 or 2, wherein said composition provides protective immunity to infection from a gram negative bacterial species selected from the group consisting of *Pasteurellaceae*; *Neisseria*; *Haemophilus*; *Salmonella*; and *Escherichia*.

5. A pharmaceutical composition according to any previous claim, wherein the Cu,Zn-SOD is obtainable from a recombinant gene cloned from bacteria.

6. A vaccine comprising (i) a bacterial Cu,Zn-superoxide dismutase (Cu,Zn-SOD) of the dimeric type, or a fragment, variant or derivative of the Cu,Zn-SOD, wherein antibodies raised against said fragment, variant or derivative

also bind intact full length Cu,Zn-SOD; or (ii) a nucleic acid coding for the bacterial Cu,Zn-SOD fragment, variant or derivative.

7. A vaccine according to Claim 6, wherein the Cu,Zn-SOD is obtainable from a recombinant gene cloned from bacteria.

8. A vaccine according to Claims 6 or 7, wherein said vaccine provides protection against meningococcal infection.

9. A method of preparing a pharmaceutical composition comprising:-

1) isolating a gene for a bacterial Cu,Zn-SOD of the dimeric type or a fragment, variant or derivative of the Cu,Zn-SOD, wherein antibodies raised against said fragment, variant or derivative also bind the full length intact Cu,Zn-SOD; and

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2) (a) synthesising the Cu,Zn-SOD fragment, variant or derivative from the gene; and combining said Cu,Zn-SOD, fragment, variant or derivative, with a pharmaceutically acceptable carrier, or

(b) combining said gene with a pharmaceutically acceptable carrier.

10. A pharmaceutical preparation comprising an antibody to a bacterial Cu,Zn-SOD of the dimeric type, or a fragment, derivative or variant of the Cu,Zn-SOD, wherein antibodies raised against said fragment, derivative or variant also bind intact full length Cu,Zn-SOD; and a pharmaceutically acceptable carrier.

11. A pharmaceutical preparation according to Claim 10, wherein said antibody provides protective immunity to meningococcal disease.

12. A pharmaceutical preparation according to Claim 10, wherein said composition provides protective immunity to *Actinobacillus pleuropneumoniae* infection.

13. A pharmaceutical preparation according to Claim 10 or 11, wherein said composition provides protective immunity to infection from a gram negative bacterial species selected from the group consisting of *Pasteurellaceae*; *Neisseria*; *Haemophilus*; *Salmonella*; and *Escherichia*.

14. A pharmaceutical preparation according to any of Claims 10 to 13, wherein said antibody displays bactericidal activity.

15. A multivalent vaccine comprising a plurality of Cu,Zn-SODs of the dimeric type, or fragments, derivatives or variants thereof, wherein antibodies raised against said fragments, derivatives or variants also bind intact full length Cu,Zn-SOD, and wherein said plurality of Cu,Zn-SODS are from the same or different species of Gram negative bacteria.

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16. A multivalent vaccine comprising a bacterial Cu,Zn-SOD of the dimeric type, or fragments, derivatives or variants thereof, wherein antibodies raised against said fragments, derivatives or variants also bind intact full length Cu,Zn-SOD; and a second protein that is not a Cu,Zn-SOD.

17. A multivalent vaccine according to Claims 15 or 16, wherein said vaccine provides protective immunity to meningococcal disease.

18. Use of a bacterial Cu,Zn-superoxide dismutase of the dimeric type, or a fragment, derivative or variant of the Cu,Zn-SOD, wherein antibodies raised against said fragment, derivative or variant also bind intact full length Cu,Zn-SOD; in the manufacture of a medicament for treatment or prevention of bacterial infection.

19. Use according to Claim 18, wherein the bacterial infection is due to Gram negative species of bacteria.

20. Use according to Claims 18 or 19 wherein the bacterial infection is due to meningoeoccal infection.

21. Use according to Claim 18, wherein said composition provides protective immunity to *Actinobacillus pleuropneumoniae* infection.

22. Use according to Claim 19, wherein said gram negative bacterial species selected from the group consisting of *Pasteurellaceae*; *Neisseria*; *Haemophilus*; *Salmonella*; and *Escherichia*.

23. Use of a nucleic acid encoding a bacterial Cu,Zn-superoxide dismutase of the dimeric type, or a fragment, derivative or variant of the Cu,Zn-SOD, wherein antibodies raised against said fragment, derivative or variant also bind intact full length Cu,Zn-SOD, in the manufacture of a vaccine against bacterial infection.

24. Use of an antibody specific to bacterial Cu,Zn-SOD of the dimeric type, or a fragment of the antibody, in the manufacture of a medicament for treatment or prevention of bacterial infection.

25. Use according to Claim 24 wherein the antibody is a monoclonal antibody.

26. Use according to Claims 24 or 25 wherein the bacterial infection is due to meningococcal infection.

27. A method of treating or preventing bacterial infection comprising administering an effective amount of a bacterial Cu,Zn-SOD or fragment, variant or derivative of the Cu,Zn-SOD, wherein antibodies raised against said fragment, variant or derivative also bind intact full length Cu,Zn-SOD.